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**In the Claims**

Please amend the claims by replacing all prior versions of the claims pursuant to 37 C.F.R. §1.121 as modified by 68 Fed. Reg. 38611 (June 30, 2003) as indicated below.

1-66. (Cancelled)

67. (Currently Amended) An isolated nucleic acid molecule comprising a nucleotide sequence encoding a polypeptide having starch synthase II activity or a nucleotide sequence complementary thereto, said nucleotide sequence selected from the group consisting of:
- (i) a nucleotide sequence having at least 97% identity to the nucleotide sequence of the protein-encoding region of the nucleotide sequence set forth in SEQ ID NO: 3;
  - (ii) a nucleotide sequence encoding a polypeptide having at least 97% identity to the amino acid sequence set forth in SEQ ID NO: 4; and
  - (iii) a nucleotide sequence which is complementary to (i) or (ii).
68. (Currently Amended) The isolated nucleic acid molecule according to claim 67 wherein the starch synthase II polypeptide comprises one or more amino acid sequences selected from the group consisting of:
- (a) KTGGLGDVAGA (SEQ ID NO: 47);
  - (b) GHRVMVVVPY (SEQ ID NO: 48);
  - (c) NDWHTALLPVYLKAYY (SEQ ID NO: 49);
  - (d) GIVNGIDNMEWNPEVD (SEQ ID NO: 50);
  - (e) DVPLLGFIGRLDGQKG (SEQ ID NO: 51);
  - (f) DVQLVMLGTG (SEQ ID NO: 52);
  - (g) AGADALLMPSRF(E/V)PCGLNQLYAMAYGT  
(SEQ ID NO: 53); and
  - (h) VGG(V/L)RDTV (SEQ ID NO: 54).

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69. (Currently Amended) The isolated nucleic acid molecule of claim 68 wherein the starch synthase II polypeptide comprises at least three of said amino acid sequences selected from the group of (a) to (h).
70. (Previously Presented) The isolated nucleic acid molecule of claim 68 wherein the starch synthase polypeptide comprises at least six of said amino acid sequences selected from the group consisting of (a) to (h).
71. (Previously Presented) The isolated nucleic acid molecule of claim 67 wherein the polypeptide is a wheat starch synthase II polypeptide.
72. (Currently Amended) The isolated nucleic acid molecule of claim 68 wherein the ~~starch~~ starch synthase II polypeptide further comprises one or more amino acid sequences selected from the group consisting of:  
    (a) GIVNGIDNMEWNPEVD (SEQ ID NO:50); and  
    (b) AGADALLMPSRF(E/V)PCGLNQLYAMAYGT  
        (SEQ ID NO: 53).
73. (Previously Presented) The isolated nucleic acid molecule of claim 71 wherein the polypeptide has the amino acid sequence set forth in SEQ ID NO: 4.
74. (Currently Amended) A probe or primer comprising at least 15 contiguous nucleotides of the ~~isolate~~ isolated nucleic acid molecule of claim 67.

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75. (Currently Amended) The probe or primer of claim 74 comprising a nucleotide sequence selected from the group of:

- ~~(i) the nucleotide sequence set forth in SEQ ID NO: 26;~~  
~~(ii) the nucleotide sequence set forth in SEQ ID NO: 27;~~  
~~(iii)~~ (i) a nucleotide sequence which encodes an amino acid sequence selected from the group consisting of:
- (a) KTGGLGDVAGA (SEQ ID NO: 47);
  - (b) GHRVMVVVPRY (SEQ ID NO: 48);
  - (c) NDWHTALLPVYLKAYY (SEQ ID NO: 49);
  - (d) GIVNGIDNMEWNPEVD (SEQ ID NO: 50);
  - (e) DVPLLGFIFRLDGQKG (SEQ ID NO: 51);
  - (f) DVQLVMLGTG (SEQ ID NO: 52);
  - (g) AGADALLMPSRF(E/V)PCGLNQLYAMAYGT  
(SEQ ID NO: 53); and
  - (h) VGG(V/L)RDTV (SEQ ID NO: 54); and
- ~~(iv)~~ (ii) a nucleotide sequence which is complementary to any one of (i) to ~~(iii)~~.

76-79. (Cancelled)

80. (Currently Amended) A method of modifying the starch content and/or starch composition of one or more tissues or organs of a plant, said method comprising the step of expressing in said plant a nucleic acid molecule for a time and under conditions sufficient for the ~~enzyme activity of~~ expression of a gene encoding one or more starch synthase II isoenzymes to be modified, wherein said nucleic acid molecule is selected from the group consisting of:

- (i) the isolated nucleic acid molecule of claim 67; and
- (ii) an antisense molecule or a co-suppression molecule which comprises a fragment of (i) which is expressed to down-regulate the expression of an endogenous starch synthase II isoenzyme of said plant.

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81. (Cancelled)

82. (Previously presented) The method of claim 80 comprising introducing the nucleic acid molecule to an isolated plant cell, tissue, or organ, and regenerating the plant from the cell, tissue or organ.

83-84. (Cancelled)

85. (Previously presented) The method claim 82 wherein the nucleic acid molecule is introduced to the plant cell, tissue, or organ by transformation.

86. (Currently Amended) A ~~transgenic~~ plant comprising a transgenic nucleic acid molecule comprising a nucleotide sequence, said nucleotide sequence selected from the group consisting of:

- (i) a nucleotide sequence encoding a polypeptide having starch synthase II activity having at least 97% identity to the nucleotide sequence of the protein-encoding region of the nucleotide sequence set forth in SEQ ID NO: 3;
- (ii) a nucleotide sequence encoding a polypeptide having starch synthase II activity the polypeptide having at least 97% identity to the amino acid sequence set forth in SEQ ID NO: 4;
- (iii) a nucleotide sequence which is complementary to (i) or (ii); and
- (iv) an antisense molecule or co-suppression molecule which comprises a fragment of (i), (ii) or (iii) which is expressed to down-regulate the expression of an endogenous starch synthase isoenzyme of the plant.

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87. (Currently Amended) A progeny plant of the ~~transgenic~~ plant of claim 86 wherein said progeny plant comprises the transgenic nucleic acid molecule.
88. (Currently Amended) A propagule of the ~~transgenic~~ plant of claim 86 wherein said propagule comprises the transgenic nucleic acid molecule.
89. (Previously presented) A gene construct or vector which comprises the isolated nucleic acid molecule of claim 67 and one or more origins of replication.
90. (Previously presented) The gene construct of claim 89 further comprising a promoter sequence in operable connection with said isolated nucleic acid molecule.
91. (Cancelled)